



MHCFC4W-08-1 Chilled/Hot Water Cassette Fan Coil

4-Pipe Heat / Cool Fan Coil 24,000 BTUH

*These specifications are subject to change without notice.
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Rev. 1.4



HVAC Guide Specifications

Chilled and Hot Water Cassette Fan Coil

4-Pipe

Nominal Size:

24,000 BTUH

MultiAqua Model Number:

MHCFC4W-08-1

Part 1 - General

1.01 System Description:

MultiAqua Chilled Water Fan Coils are manufactured with galvanized steel and high impact molded polymers.

1.02 Quality Assurance:

- A. ETL Certified in accordance with U.L. Standard 95, latest version (U.S.A.).
- B. Manufactured in a facility registered to ISO 9002, Manufacturing Quality Standard.
- C. Fully load tested at the factory.
- D. Damage resistant packaging.

1.03 Delivery, Storage and Handling:

- A. Packaged and readied for shipment from the factory.
- B. Controls shall be capable of withstanding 150°F storage temperatures in the control compartment.

Part 2 - Product

2.01 Equipment:

- A. General:
 - 1. Unit shall be a factory assembled and tested water fan coil.
 - 2. Unit shall be assembled with high quality.
 - 3. Contained within the unit shall be all factory wiring, piping, and associated controls.
- B. Unit Cabinet and Cover:
 - 1. Cabinet is constructed of galvanized sheet metal.
 - 2. Cover composed of high impact polymers.
 - 3. Internally and externally insulated to ensure quiet operation.
- C. Fan Motor and Blower Wheels:
 - 1. Available in 208/230-1-50/60 VAC.
 - 2. Fan motor shall be three speed, direct drive, and PSC type.
 - 3. Fan motor shall be totally enclosed.
 - 4. Fan motor shall be internal overload protected.
 - 5. Radial blower wheel is dynamically balanced.
- D. Air Distribution:
 - 1. Unit contains four manually adjustable discharge air louvers.
- E. Water Coil:
 - 1. Manufactured with water coils containing copper tubing mechanically bonded to aluminum fins.
 - 2. Maximum operating pressure is 200 psig.
 - 3. Coils are designed to accept an entering water temperature not to exceed 160°F
 - 4. Pressure independent flow control required on both coils to not exceed max flow for each coil.
Consult primary coil and secondary coil data for proper sizing
- F. Drain Pan:
 - 1. Constructed of injected molded polystyrene.

G. Filters:

1. Unit shall contain a woven panel washable filter.

H. Fresh Air:

1. Unit shall be able to receive up to 50% filtered fresh air.
2. Fresh air introduced shall be externally fan forced and externally controlled.

Part 3 - Controls and Safeties**3.01 Controls:**

- A. Fan coils are factory wired and tested.
- B. Unit includes a terminal block that is capable of incorporating a 24 vac, field supplied, hard wired thermostat.

3.02 Safeties:

- A. Fan coil contains a renewable fuse on the low voltage side of the transformer.
- B. Coils shall be designed to accept an entering water temperature not to exceed 160°F

Part 4 - Operating Characteristics**4.01 Electrical Requirements**

- A. Electrical line voltage connections shall be made at the factory supplied terminal block.
- B. Factory wiring shall be rated according to UL listing at the time of manufacturing.

4.02 Installation in high ambient/high humidity environments

- A. Cabinets are internally insulated from the factory. However, when these units are installed in high ambient/high humidity environments, additional external cabinet insulation may be required.

Part 5- Definitions**5.01 Abbreviations:**

CFM = Cubic Feet per Minute
DB = Dry Bulb Temperature
EWT = Entering Water Temperature
GPM = US Gallons Per Minute
MBH = BTU X 1000
SC = Sensible Cooling
TC = Total Cooling = Sensible + Latent
WB = Wet Bulb Temperature
WPD = Water Pressure Drop in feet of head
dB = Decibel Level
m = Meter
In = Inches
FP I= Fins per Inch
OD = Outside Diameter
ID = Inside Diameter
MCA = Minimum Circuit Amps
MOP = Maximum Over current Protection
LBS = Pounds U.S.

5.02 Measurements

- A. All measurements with regard to length, width, and height shall be in inches.

MHCFC4W-08-1

Product Specifications

Physical Data								
Model Number	Overall Height (in)	Overall Width* (in)	Width** (in)	Weight (lbs.)	Cooling Rows FPI	Heating Rows FPI	Water Inlet/Outlet (in)	Drain (in)
MHCFC4W-08-1	16.8	32.7	28.0	71.7	3/14	1/14	¾" FPT	1" barb

* Units are Square. Overall width is the cover dimension. See IOM for drawing details.

* Units are Square. Width is the cabinet dimension. See IOM for drawing details.

Electrical Data***						
Model Number	CFM	Volts/ Phase/ Hertz	Motor Watts	Full Load Amps	Fuse or HACR Circuit Breaker or Glass Fuse Per Circuit	
					MCA	MOP
MHCFC4W-08-1	550	208/230-1- 50/60	130	.65	1	1

* All Electric Data Shown is at 60 hz

MHCFC4W-08-1 Chilled Water Performance Data

MHCFC4W-08-1 COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
550*	42	3.0	TC	15950
			SC	14397
			WPD	4.3
		4.5	TC	23240
			SC	15975
			WPD	9.1
		6.5	TC	26178
			SC	17232
			WPD	17.9
		7.5	TC	27036
			SC	17607
			WPD	23.3

***High Speed**

MHCFC4W-08-1 COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
550*	45	3.0	TC	17629
			SC	13590
			WPD	4.3
		4.5	TC	20836
			SC	14966
			WPD	9.0
		6.5	TC	23310
			SC	16012
			WPD	17.8
		7.5	TC	24086
			SC	16341
			WPD	23.1

***High Speed**

Recommended minimum flow rate for the primary coil at ≥ 2 fps is 2.75 gpm

Recommended maximum flow rate for the primary coil at ≤ 6 fps is 7.75 gpm

MHCFC4W-08-1 Hot Water Performance Data

This heating performance data is at dry bulb temperature indicated / wet bulb temperature not considered

MHCFC4W-08-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
50	550	3.0	4.0	17968	22492	27031	31581	36141	40709	45281	49856
		4.5	8.3	19231	24067	28916	33776	38643	43516	48394	53275
		6.5	16.3	20035	25065	30106	35155	40211	45271	50335	55401
		7.5	21.3	20280	25369	30468	35574	40685	45801	50921	56042

MHCFC4W-08-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
60	550	3.0	4.0	13514	18027	22557	27099	31652	36213	40780	45350
		4.5	8.3	14451	19278	24119	28971	33832	38699	43572	48448
		6.5	16.3	15047	20071	25105	30148	35198	40254	45313	50376
		7.5	21.2	15229	20312	25404	30505	35612	40724	45839	50958

MHCFC4W-08-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
70	550	3.0	3.9	9053	13557	18078	22613	27159	31714	36276	40842
		4.5	8.3	9667	14486	19319	24164	29019	33881	38749	43622
		6.5	16.3	10058	15074	20102	25140	30185	35236	40292	45352
		7.5	21.2	10178	15254	20340	25436	30538	35646	40759	45874

MHCFC4W-08-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
80	550	3.0	3.9	4585	9080	13593	18121	22661	27210	31767	36328
		4.5	8.3	4879	9689	14515	19353	24202	29059	33923	38791
		6.5	16.2	5067	10075	15097	20129	25169	30216	35268	40324
		7.5	21.1	5124	10193	15274	20364	25462	30566	35675	40787

Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows:

MHCFC4W-08-1 HOT WATER CAPACITY (Primary coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	3.0	31985
	4.5	34208
	6.5	35601
	7.5	36023

MHCFC4W-08-1 Chilled Water Performance Data

MHCFC4W-08-1 COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
550*	42	2.5	TC	8683
			SC	7172
			WPD	1.5
		3.0	TC	9726
			SC	7569
			WPD	2.0
		4.0	TC	11242
			SC	8176
			WPD	3.5
		5.0	TC	12333
			SC	8616
			WPD	5.4

***High Speed**

MHCFC4W-08-1 COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
550*	45	2.5	TC	7675
			SC	6826
			WPD	1.5
		3.0	TC	8575
			SC	7178
			WPD	2.0
		4.0	TC	9973
			SC	7713
			WPD	3.5
		5.0	TC	10946
			SC	8099
			WPD	5.3

***High Speed**

Recommended minimum flow rate for the secondary coil at ≥ 2 fps is 2.75 gpm

Recommended maximum flow rate for the secondary coil at ≤ 6 fps is 7.75 gpm

MHCFC4W-08-1 Hot Water Performance Data

This heating performance data is at dry bulb temperature indicated / wet bulb temperature not considered

MHCFC4W-08-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
50	550	2.5	1.4	10027	12552	15099	17666	20249	22845	25452	28067
		3.0	1.9	10389	13000	15634	18285	20950	23628	26316	29011
		4.0	3.3	10888	13618	16367	19131	21908	24696	27491	30294
		5.0	5.0	11218	14025	16848	19686	22534	25392	28257	31128

MHCFC4W-08-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
60	550	2.5	1.4	7595	10104	12638	15193	17764	20350	22947	25536
		3.0	1.9	7863	10460	13080	15719	18374	21043	23721	26409
		4.0	3.3	8233	10949	13686	16440	19208	21987	24775	27570
		5.0	5.0	8477	11272	14085	16913	19753	22603	25461	28326

MHCFC4W-08-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
70	550	2.5	1.4	5156	7651	10172	12715	15276	17851	20440	23039
		3.0	1.9	5332	7915	10523	13150	15795	18454	21124	23804
		4.0	3.3	5574	8278	11003	13747	16505	19276	22056	24845
		5.0	5.0	5734	8517	11320	14138	16970	19812	22664	25522

MHCFC4W-08-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
80	550	2.5	1.4	2712	5193	7701	10232	12782	15349	17928	20519
		3.0	1.9	2795	5365	7961	10577	13212	15862	18524	21197
		4.0	3.3	2911	5603	8317	11051	13800	16562	19336	22118
		5.0	5.0	2988	5760	8552	11361	14185	17020	19865	22717

Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows:

MHCFC4W-08-1 HOT WATER CAPACITY (Secondary Coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	2.5	17921
	3.0	18529
	4.0	19358
	5.0	19900

MHCFC4W-08-1 Chilled Water Performance Data

MHCFC4W-08-1 COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
550*	42	5.5	TC	25459
			SC	17016
			WPD	3.3
		6.5	TC	27112
			SC	17719
			WPD	4.6
		7.5	TC	28421
			SC	18309
			WPD	6.0
		8.5	TC	29498
			SC	18781
			WPD	7.6

***High Speed**

MHCFC4W-08-1 COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
550*	45	5.5	TC	22886
			SC	16366
			WPD	3.3
		6.5	TC	24353
			SC	16999
			WPD	4.6
		7.5	TC	25505
			SC	17035
			WPD	6.0
		8.5	TC	26459
			SC	17437
			WPD	7.2

***High Speed**

**Pressure independent flow control required on both coils to not exceed max flow for each coil
Consult primary coil and secondary coil data for proper sizing**

Recommended minimum flow rate for both coils piped in parallel at \geq 2fps is 5.5 gpm

Recommended maximum flow rate for both coils piped in parallel at \leq 6fps is 15.5 gpm

MHCFC4W-08-1 Hot Water Performance Data

This heating performance data is at dry bulb temperature indicated / wet bulb temperature not considered

MHCFC4W-08-1 HOT WATER CAPACITIES (Both Coils)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
50	550	5.5	3.1	20892	26157	31436	36726	42026	47332	52644	57959
		6.5	4.3	21252	26602	31964	37336	42717	48103	53494	58889
		7.5	5.6	21513	26924	32346	37777	43215	48659	54106	59557
		8.5	7.1	21710	27167	32634	38109	43590	49076	54566	60058

MHCFC4W-08-1 HOT WATER CAPACITIES (Both Coils)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
60	550	5.5	3.1	15689	20943	26213	31495	36788	42088	47394	52704
		6.5	4.3	15956	21296	26651	32016	37390	42770	48156	53546
		7.5	5.6	16149	21552	26967	32391	37924	43262	48705	54152
		8.5	7.0	16296	21745	27205	32674	38150	43632	49118	54607

MHCFC4W-08-1 HOT WATER CAPACITIES (Both Coils)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
70	550	5.5	3.1	10482	15727	20988	26263	31548	36842	42143	47449
		6.5	4.3	10657	15989	21335	26694	32062	37437	42819	48205
		7.5	5.6	10784	16179	21587	27005	32432	37866	43305	48748
		8.5	7.0	10880	16322	21776	27240	32711	38188	43670	49156

MHCFC4W-08-1 HOT WATER CAPACITIES (Both Coils)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	100°	110°	120°	130°	140°	150°	160°
80	550	5.5	3.1	5271	10506	15759	21026	26305	31593	36888	42190
		6.5	4.2	5355	10678	16017	21368	26730	32100	37477	42859
		7.5	5.6	5415	10802	16203	21616	27037	32466	37901	43340
		8.5	7.0	5461	10896	16344	21802	27268	32741	38219	43701

Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows:

MHCFC4W-08-1 HOT WATER CAPACITY (Both coils)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	5.5	37258
	6.5	37874
	7.5	38318
	8.5	38653

These specifications are subject to change without notice.
Check www.multiaqua.com for latest published information.

MHCFC4W-08-01 CFM Data

MODEL #	MHCFC4W-08-1
Fan Speed	CFM
L	400
M	475
H	550
Wattage @ High Speed	130

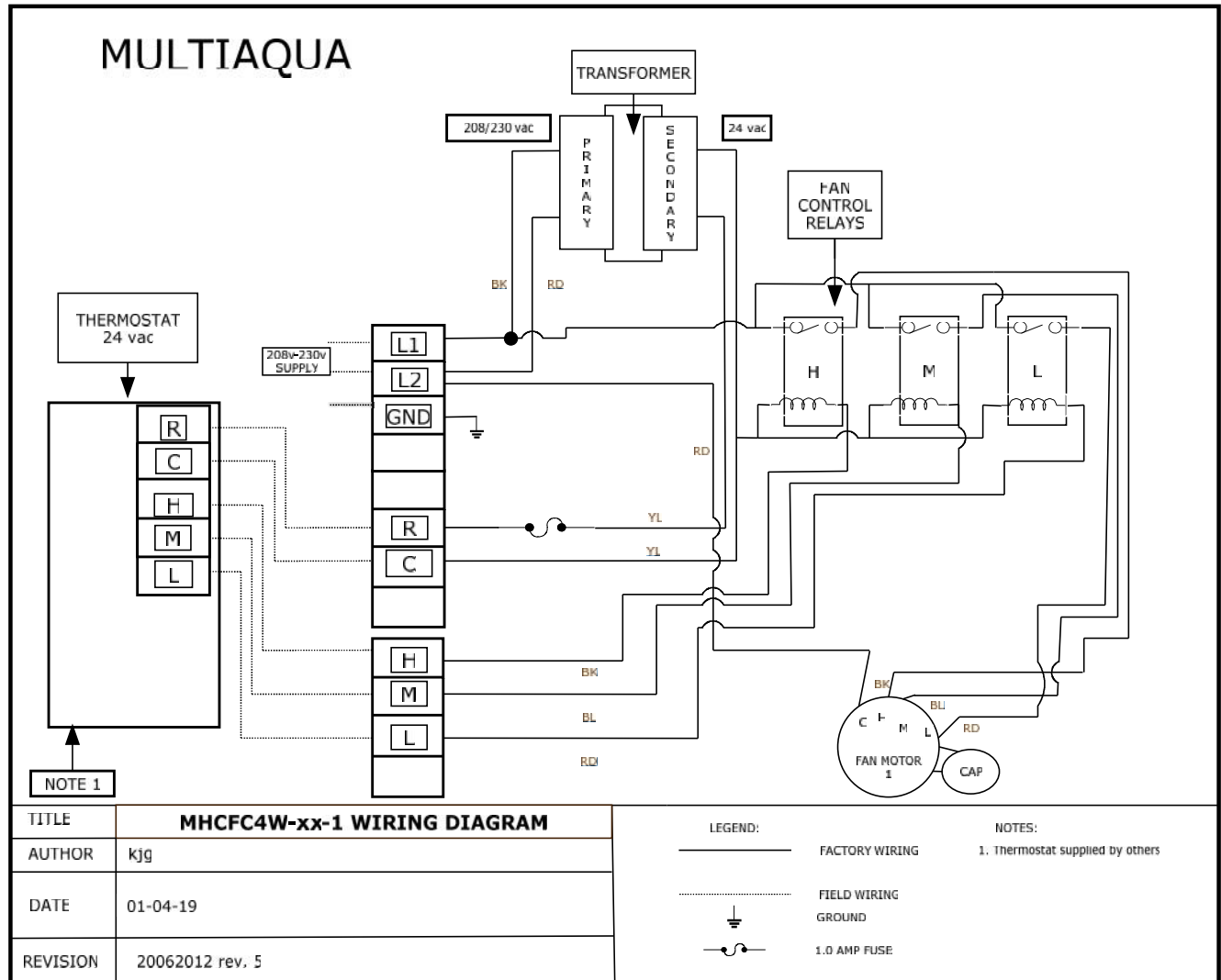
MHCFC4W-08-1 Sound Data

MODEL #	MHCFC4W-08-1
Fan Speed	dB @ 1 m
H	46
M	43
L	39

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MHCFC4W-08-1

Wiring Diagram



See Installation and Operation Manual
for Dimensional Drawings

